

What is claimed is:

- [c1] 1.A rings-based system on a chip, comprising:
a plurality of ring members on a ring that communicate using point-to-point connectivity;
a message traversing the ring from member to member;
the system being adapted so that upon the message arriving at a given ring member the message is processed by that ring member if the message is applicable to that ring member, and if the message is not applicable to that ring member, the message is passed on to the next ring member;
wherein at least one of the ring members comprises a bridge.
- [c2] 2.The system of claim 1, wherein the bridge allows messages to travel from one side to another side of the bridge without passing through intermediate ring members.
- [c3] 3.The system of claim 2, wherein the bridge is configured so that the message arriving at the bridge is routed according to whether an address associated with the message corresponds to one side of the bridge or the other side of the bridge.
- [c4] 4.The system of claim 2, wherein the message is passed across the bridge when the address is associated with the one side of the bridge, and wherein the message is passed through the bridge when the address is associated with the other side of the bridge.
- [c5] 5.The system of claim 3, wherein the bridge includes logic with a range of addresses, such that the message is routed to one side of the bridge or the other side of the bridge depending on whether the address is within the range.
- [c6] 6.The system of claim 5, wherein the logic is established based on a configuration message that causes the ring members to assign their address spaces.
- [c7] 7.The system of claim 6, wherein the configuration message is an enumeration message.

- [c8] 8.The system of claim 1, wherein the plurality of ring members are a first plurality of ring members comprising a first ring network, further comprising a second plurality of ring members comprising a second ring network, and wherein the bridge comprises a bridge between the two ring networks.
- [c9] 9.The system of claim 8, wherein the bridge is adapted to determine which messages to pass to the second ring network and which messages to keep on the first ring network.
- [c10] 10.The system of claim 8, wherein the bridge is configured so that the message arriving at the bridge is routed according to whether an address associated with the message corresponds to one side of the bridge or the other side of the bridge.
- [c11] 11.The system of claim 8, wherein the message is passed across the bridge when the address is associated with the first ring network, and wherein the message is passed through the bridge when the address is associated with the second ring network.
- [c12] 12.The system of claim 8, wherein the bridge includes logic with a range of addresses, such that the message is routed to the first ring network or the second ring network depending on whether the address is within the range.
- [c13] 13.The system of claim 12, wherein the logic is established based on a configuration message that causes the ring members to assign their address spaces.
- [c14] 14.The system of claim 13, wherein the configuration message is an enumeration message.
- [c15] 15.The system of claim 1, wherein the bridge is adapted to process a first category of message and a second category of message.
- [c16] 16.The system of claim 15, wherein the bridge makes a routing determination based on the second category of message.
- [c17] 17.The system of claim 15, wherein the first category of message is a

supervisory message and the second category of message is a work message.

- [c18] 18.The system of claim 15, wherein the bridge identifies the category of message by examining a message type included in the message.
- [c19] 19.A rings-based system on a chip, comprising:
a plurality of ring members on a ring that communicate using point-to-point connectivity;
a message traversing the ring from member to member;
the system being adapted so that upon the message arriving at a given ring member the message is processed by that ring member if the message is applicable to that ring member, and if the message is not applicable to that ring member, the message is passed on to the next ring member;
wherein the message includes information indicating whether the message has already passed through one of the ring members.
- [c20] 20.The system of claim 19, wherein the information is used to identify stray messages.
- [c21] 21.The system of claim 20, wherein a stray message is a message having an address that does not correspond to any of the members on the ring.
- [c22] 22.The system of claim 19, wherein the system is adapted to respond to information indicating that the message has already passed through one of the ring members by discarding the message.
- [c23] 23.The system of claim 19, further comprising:
a second plurality of ring members on a second ring;
a bridge connecting the two rings; and
wherein the bridge includes logic for identifying when the message has already passed the bridge.
- [c24] 24.The system of claim 19, wherein one of the ring members is an anchor, and wherein the anchor includes logic for identifying when the message has already passed the anchor.
- [c25] 25.The system of claim 19, wherein the information is a bit included in the

message that is set to indicate the message has previously passed through or has not been previously passed through the one ring member.

- [c26] 26.A method of detecting stray messages in a rings-based system, comprising:
providing a message including information designating whether the message has passed by a ring member on a ring with a plurality of members;
modifying the information when the message passes by the ring member a first time; and
determining that the message is a stray message when the message arrives at the ring member a second time.
- [c27] 27.The method of claim 26, further comprising the step of removing the message in response to the step of determining.
- [c28] 28.The method of claim 26, wherein the information is at least one bit in the message.
- [c29] 29.The method of claim 28, wherein the step of modifying comprises setting the at least one bit.
- [c30] 30.The method of claim 26, wherein the step of determining is performed by a bridge or an anchor on the ring.